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VIEWS ON GOVERNMENT POLICIES

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Section 1. Government actions Unfavourable to renewables and carbon emissions

1.1 VAT on solar panels and batteries

From October 1st VAT of 20% will apply to solar panel installations where more than 60% of the cost is materials (solar panels or batteries). Previously a rate of 5% was applied.

For more details see separate document VAT on solar panels and batteries, which discusses how this relates to the EU.

1.2 Climate Change Levy

Climate change levy is charged to consumers apart from domestic and transport users. Electricity from renewables was exempt up to 2015, applying to renewables is a retrospective taxation.

The current rate for electricity is 0.847p/KWH, gas is 0.339p/KWH. This has risen with inflation since 2007.

According to <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2018> the emissions from electricity are 0.28307 kg CO₂ e/KWH and gas 0.20437 kg CO₂ e/KWH.

These tax rates do not align with current emission rates. The following table shows the resulting tax rate per kg of CO₂ e

	Tax rate p/KWH	kg CO ₂ e/ KWH	KWH/ kg CO ₂ e	Tax p/ kg CO ₂ e
Electricity	0.847	.28307	3.53	2.992
Gas	0.339	0.20437	4.89	1.659

This has occurred because the tax rate has been increased with inflation without regard for current emissions rates.

1.3 Subsidies to fossil fuels

The government has argued that there are no direct subsidies, this is because the UK defines a subsidy as action that lowers the pre-tax price to consumers below international market levels.

However, in the March 2017 budget the chancellor announced plans to help the North Sea oil and gas industry, on top of £2.3bn in the last 3 years.

[BBC News Article - March 2017 budget help for North Sea Oil and Gas](#)

The EU Commission report on Energy prices and costs in Europe estimates UK subsidies to fossil fuels at £10.5bn/year, which is the highest in Europe.

[EU Commission report on energy prices and costs in Europe](#)

1.4 Nuclear

Whilst nuclear provides a base load, which is currently needed:

- The costs of new nuclear are extremely high.
- There is risk associated with stockpiling depleted fuel, and decommissioning at end of life.

- There is technology risk which could lead to projects being delayed, cost escalation or even projects being abandoned.
- Uranium is a finite mineral resource, as deposits are depleted the uranium content of ore will drop, requiring significantly more energy to enrich it to a level where it can be used in Nuclear Power plant.
- Nuclear contributed 19.5% of energy demand in 2018
- Construction of Nuclear plant has embedded carbon emissions from materials used in construction – particularly concrete. A large amount of energy is also used in uranium mining. In an article in the [Ecologist](#) research is reviewed, which shows that the lifetime carbon emissions from Nuclear generation is likely to exceed 50g/KWH, which is the Committee on Climate Change (CCC) recommended limit. The article goes on to show that if low grade Uranium ore (<0.005%) is used then emissions exceed emissions from gas.
- In the [Zero Carbon Britain Plan](#) scenarios have been modelled where all UK energy demand is satisfied by a combination of renewables (82% of the time), battery storage to deal with short term balancing (3%) and backed by gas fired stations powered by low or zero carbon gas generated from surplus electricity and biomass to deal with situations where there is insufficient renewable supply. This scenario does not need new nuclear.
- Accord to [BEIS Public Opinion Tracker](#) in March 2019 only 35% of people supported Nuclear.

Hinkley Point

Is being subsidised via a strike price of £92.50 per MWH agreed in 2012, which will be inflation adjusted over the next 35 years. This price is proving to be substantially higher than that achieved via contracts for difference agreed for other energy sources, the current wholesale price being about £50/MWH.

Regulated Asset Base Model (RAB) for Nuclear

Beyond Hinkley Point it is proposed that suitable large scale nuclear is financed using [Regulated Asset Base \(RAB\)](#), this is designed to reduce the cost of private finance. This is out for consultation with responses required by 14th October 2019. We will need to consider how we respond to this.

Small scale nuclear

Advocates claim that small modular reactors provide an incremental and more financeable way of providing clean nuclear energy, however the Atkins report for BEIS estimates the cost of electricity generated between £86-124/MWh (see [Wise International Article](#))

- [Rolls-Royce Small Modular Reactors web page](#)
- [World Nuclear Association - Small nuclear power reactors](#)
- [Wise International article on costs of SMRs under construction](#)

1.5 Subsidies

Starting with the Renewables Obligation in 2002 there have been various subsidies available to encourage the development of renewables.

The problems with subsidies are:

- Changes to subsidies are difficult to plan for and have led to instability in the renewables industry.
- They encourage profit rather than carbon reduction.
- Consumer focussed subsidies such as FiT and RHI have encouraged a culture of making money through installing renewables, rather than rewarding low consumption.
- The timing of installation of renewables by generators has been driven by subsidy, so there are few installations after subsidy ends.
- Generators are not sufficiently penalised for high emissions.
- Generators can be rewarded for expensive generation.
- Reliance on subsidies has distorted the market and has led to unforeseen consequences.

For consumers there should instead be incentives to reduce net consumption and to reduce carbon, which would encourage higher consumers to install renewables and storage. This could be either a payment for keeping net consumption below a limit, by charging more for energy used above the limit, or by taxing energy use above the limit.

Effectively increasing charges on larger consumers would not penalise lower consumers, and so should not lead to fuel poverty.

The rest of this section reviews individual subsidies.

Renewables obligation scheme (RO)

The renewables obligation scheme closed to new generation from 31 March 2017.

<https://www.ofgem.gov.uk/environmental-programmes/ro/about-ro/ro-closure>

The scheme closed for On-shore wind and small scale PV in 2016, it closed for large scale PV in 2015.

The scheme provided support for renewables by Renewable Obligation Certificates (ROCs), which enable a generator to sell a certificate to an electricity supplier so that the supplier can demonstrate that it has met its obligation to supply renewable energy. This obligation will run until 2037 when the last generators into the scheme will fall out.

It had been possible for a generator to be subsidised under either RO or FiT, but not both.

The scheme is being replaced by contracts for difference.

Problem is that this led to a market in certificates.

Feed In Tariff (FiT)

FiT was introduced in 2010 and was initially generous and encouraged 'making money for the rich', which led to a boom mainly in solar PV installations.

There have been a number of unplanned reductions in FiT, which have led to instability in the renewables industry.

FiT is paid for by energy supply companies, who pass the cost on to consumers, so those who don't receive FiT pay for those that do.

From March 2019 installations not already planned will not qualify for FiT.

Contracts for difference (CFD)

These are allocated in three pots:

Pot 1 – established technologies such as PV and On-shore Wind

Pot 2 – less established technologies such as Off-shore wind, biomass CHP

Pot 3 – biomass conversion.

<https://www.gov.uk/government/collections/electricity-market-reform-contracts-for-difference>

When the CFD regulations were introduced in 2014 auctions were held for Pot1 and Pot2 contracts.

The 2017 round of CFD funding only allowed Pot 2 applications, the majority of these were for off-shore wind.

In the 2019 round of CFD auctions is only open to Pot 2 qualifying technologies.

Pot 1 technologies have potential to provide electricity at low cost that is needed to meet climate change targets.

CfDs can lead to very high costs for electricity generated for a long time into the future, and divert investment away from renewables that enjoy this subsidy such as On-shore wind and Solar PV.

Renewable Heat Incentive (RHI)

This is a payment for installing some renewable heat sources in buildings where any energy efficiency measures indicated in an Energy Performance Certificate (EPC) have been carried out.

In many cases payment is made based on an assessment of heat demand assessed from an EPC.

Uncertainty about the performance of heat pumps has led to a requirement for recent installations to be metered for performance (not payment) to ensure that performance is sufficient.

In other cases heat generation is metered for payment, this can lead to abuses as heat generation is incentivised.

1.6 Ending of deemed export

From March 2019 deemed export of 50% of generation will no longer be paid. There is now an obligation for suppliers to pay for exported electricity, but the minimum rate is set to zero, rather than close to the wholesale price. Some electricity suppliers are paying for meter exports through smart meters, but this is always at less than the wholesale price, so there is no subsidy element. Most residential systems export >80%.

1.7 On-shore Wind

On 18/6/2015 the secretary of state made a statement to the house about planning and on-shore wind, which effectively ensured that it was not possible to get planning permission.

[Statement on onshore wind](#)

On-shore wind are currently not permitted in bids for contracts for difference. There has been a small exception for remote small islands.

[Renews article 6/2/2019](#)

New On-shore wind installations fell by 80% in 2018 ([renewableUK 18/1/2019](#)) This article goes on to say that there are 4,466 MW of shovel ready projects which already have planning permission and could provide 12TWH at about £46/MWH.

According to [BEIS Public Opinion Tracker](#) in March 2019 79% of people support On-shore wind.

1.8 Solar PV

Solar PV will no longer qualify for FIT, RO or Cfd, so is no longer subsidised.

<https://www.gov.uk/government/statistics/solar-photovoltaics-deployment>

The peak year for solar installations was 2015, where 4356 MW of capacity was installed, of which 1477MW was under FIT and 2770MW under RO. Only 218MW was not subsidised.

In 2018 265MW was installed of which 106.7MW was under FIT and 54.5MW under RO. 104.4MW was unsubsidised.

From March 2019 FIT ended for new schemes, and from October 2019 schemes approved before March 2019 but not yet installed will no longer qualify.

The lack of subsidy and the low price of exported electricity makes it difficult to make the case for installing new PV, unless this is mainly for self consumption.

According to [BEIS Public Opinion Tracker](#) in March 2019 89% of people support solar.

1.9 EIS, SEIS, VCT and SITR investment

Where a company generates significant revenue from subsidised renewable generation it no longer qualifies for EIS, SEIS, VCT or SITR investment.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/385147/Venture_Capital_Schemes.pdf

As this change was introduced to stop double subsidy, it should be reversed when subsidy is no longer available.

1.10 Inclusion of Solar PV in business rates

Adding solar PV to a business property increases its rateable value. This was a retrospective tax

1.11 Fracking

There are two worrying proposals:

- Shale gas exploration projects to be allowed under permitted development.
- Shale gas to be treated as Nationally Significant Infrastructure projects.

These 2 proposals went out to consultation in July 2018. The future of fracking was debated in March 2019 with substantial cross-party opposition.

The matter has not yet been brought back before the house.

See separate document on Fracking for more details.

Essential shale gas is a fossil fuel and so has no part to play in a zero carbon future. Fracking is also extremely unpopular!

1.12 Relaxing the building regulations

In 2012 the building regulations were amended to require that from 2016 all new homes should be built to zero carbon standards, and that from 2019 this should apply to all buildings. This was necessary because the market had failed to bring about improvements in energy use. This was to be reviewed in 2015.

In 2015 the government scrapped these building regulation requirements. The deregulation bill appeared to remove the ability for local authorities to require higher energy efficiency standards than the current building regulations.

Local authorities believe they have limited powers to put planning restrictions that would require higher energy efficiency standards. However the RTPI has published [guidance](#) to encourage Las to

insist on 19% Carbon emission reduction from 2013 Building Regulations. See also a [report](#) on this topic.

1.13 Infrastructure projects

In general, large construction projects have significant embedded emissions, so these need to be considered against potential savings resulting after project construction.

Third runway at Heathrow

This is currently approved but the commitment to reduce carbon emissions to net zero by 2050 is this consistent:

- Air transport is a significant emitter, and emissions from aircraft are relatively difficult to reduce.
- The number of flights needs to decrease, rather than increase to bring down emissions.

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